How industry influences public opinion about the Internet of Things

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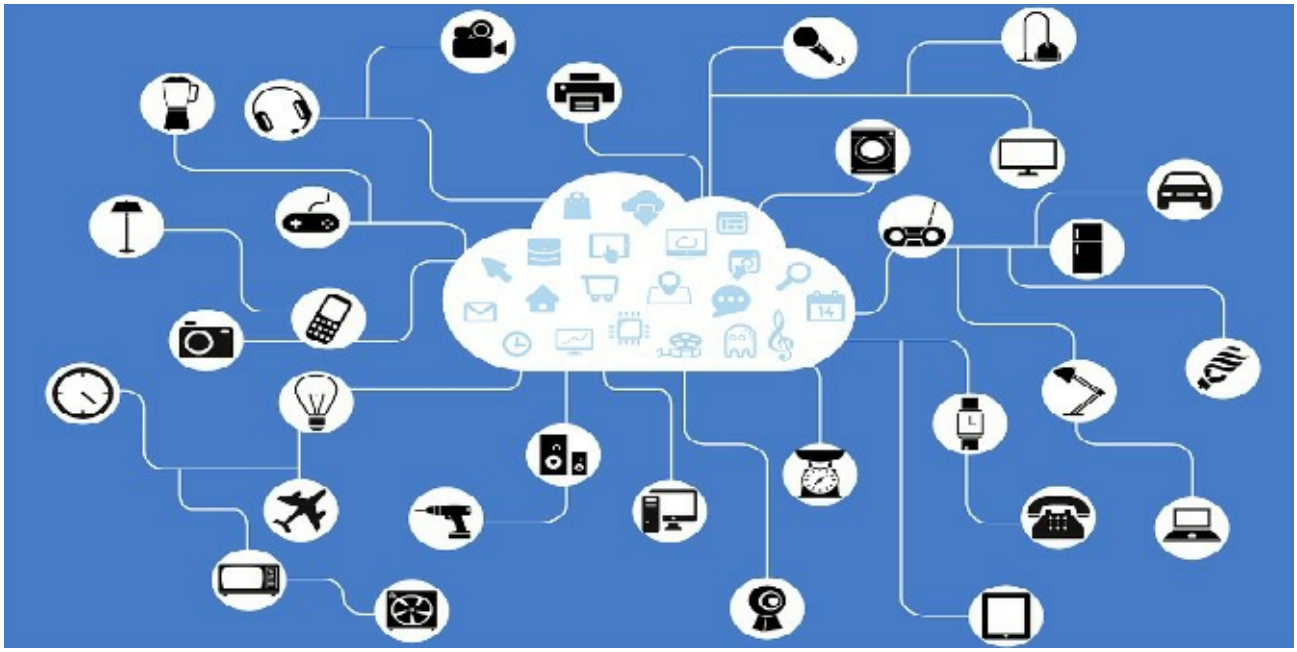

Any device with an on-and-off switch can (and should) be connected to the Internet. This is the basic idea of the industrial internet, also referred to as the 'internet of things' (IoT). Forecasts indicate that around 6.4 billion connected devices will be in use worldwide by the end of 2016, up 30 per cent from 2015. The total will reach 20.8 billion by 2020.

These figures show the scale of the technological change, but there is little agreement on the likely consequences. Arguments about the industrial internet mix fact and science with speculation and emotion. Some warn that we are witnessing the arrival of a darker world of surveillance, consumer lock-in, and violations of privacy and security. Others predict a revolutionary, fully-interconnected "smart" world of progress, efficiency and opportunity.

The players leading the implementation of the industrial internet currently portray these technological advances positively, highlighting the benefits to companies and consumers. And the dominant narratives will affect policymaking.

The current stage of development of the industrial internet focuses on the actual deployment of this technology. In recent years we have seen an increasing number of studies on the subject, with academic research ranging from engineering to computer science, from industrial organisation to communication studies.

The production of a policy-oriented discourse on the industrial internet, however, has been influenced especially by reports by consultancies and from the industry itself. We limited our analysis to five emblematic publications, all of them released in 2015, by the World Economic Forum, Accenture, the Telecommunications Industry Association, McKinsey, and The Internet Society. Looking at these reports allows us to identify some narratives that are influencing public opinion and policymakers.

The interest of industry is proportional to the investment in developing the industrial internet. According to the

International Data Corporation, worldwide spending on the Internet of things will grow at a compound annual growth rate (CAGR) of 17 per cent from $698.6 billion in 2015 to nearly $1.3 trillion in 2019.

“Everything will change”

One common message, according to these reports, is that the industrial internet will change the way production is conceived. After years of economic crisis, the hope is that the IoT will have an effect comparable to the major “industrial revolutions” of the past. According to Accenture, the industrial Internet of things could contribute US$14.2 trillion to world output by 2030. For this reason, the label “Industry 4.0” is also widely used, playing with the reference to Internet 4.0 as well as the fourth industrial revolution. This message is crafted specifically for the benefit of the business sector, where the industrial internet is celebrated as “a tool for companies for finding growth in unexpected opportunities” (Accenture 2015).

Secondly, the same narrative emphasises benefits for consumers. Technical advancements in the IoT directly affect the daily lives of ordinary people, building an image of a science fiction-like bright future: driverless cars, automation of boring and repetitive jobs, smart refrigerators and self-checkouts in stores. The industrial internet is glorified as “an immense opportunity for the improvement of the lives of citizens around the globe” (Telecommunications Industry Association 2015).

Another narrative portrays a sense of “togetherness.” It constitutes something of a call to arms to “conduct a joint lighthouse project to demonstrate the real benefits and raise the profile of the Industrial Internet among the general public” (World Economic Forum 2015). According to this message, the promise of growth for companies as well as of benefits for consumers should lead to a transversal coalition of companies and citizens. The conditions are set to pass from the discursive practices to political practice and exert power over legislation. “Policymakers will be called upon to create the regulatory framework to enable IoT developments” (McKinsey 2015).

These key narratives – that production will be boosted, consumers will benefit and a coalition of companies and citizens will form − are key in explaining how the industrial internet is presented to the public and policymakers. They are based on the already visible effects of the IoT while promising a bright future when technology advances further.

In parallel to this, the protagonists of Industry 4.0 and IoT are crafting more future-oriented narratives to meet raised expectations. These other narratives are part of the same discursive practice and are centred on the next two stages foreseen for the development of the industrial internet, such as increased operational efficiency and, further in the future, the emergence of an outcome economy.

Operational Efficiency and the Digital Revolution

According to many of the above-cited reports, more profound changes will happen in sectors directly affected by public policies in the near future. Sectors where the industrial internet is already in use will be affected. Healthcare, transportation, energy and manufacturing or urban planning will be among the first areas affected.

The industrial internet will gradually change healthcare, with applications for remote patient monitoring allowing doctors to obtain real-time access to health data. In the energy sector, “smart grids” will drive efficiencies in both energy production and consumption. Greater connection and automation in manufacturing, at the core of the concept of the industrial internet, will inevitably affect industrial policy.

For most manufacturers, energy companies, agricultural producers and healthcare providers, the case for adopting the industrial internet is based on incremental results in increased revenues or savings. Widespread arguments indicate operational efficiency as the most immediate and tangible effect of early adoption of the industrial internet with efficiency brought by the use of sensors, analytic precision in unforeseen quality and real-time data to anticipate responses and enhance productivity.

The 2015 World Economic Forum report argues that such gains in efficiency will have a direct effect, to improve

“government services and enhance the quality of life.” It quotes examples in security, water management, parking, etc. that would allow rationalised use of resources. Most importantly, many industrial internet applications will allow or require direct policy responses.

Outcome Economy: Promises of the Digital Era

In Los Angeles, in 2014, a company called StreetLine installed 7,000 hockey puck-sized sensors in city roadbeds that communicate real-time parking conditions to smartphone apps, telling drivers where parking is available. These parking spaces have increased the city’s parking revenue by 2 per cent, while decreasing the average cost of parking, and increasing space utilisation by 11 per cent. This is an experimental example of the further stage of the industrial internet evolution, labelled the outcome economy, in which companies create value not just by selling products and services but by delivering solutions that directly produce quantifiable results.

“The outcome economy will be built on the automated quantification capabilities of the Industrial Internet. The large-scale shift from selling products or services to selling measurable outcomes is a significant change that will redefine the base of competition and industry structures” (World Economic Forum 2015).

In an *outcome economy*, agricultural equipment manufacturers will sell computerised vehicles to farmers based on the yield per acre that those vehicles can help deliver. Similarly, agricultural service providers like seed companies and firms making farming software will also sell their products on the basis of how their products can help farmers maximise their yield, minimise resource requirements or both. This is already happening in some cases. In 2013, Monsanto, for instance, purchased Climate Corporation, a company that has used remote sensing to map all the farm fields in the United States by shape, type of crop, crop yields, soil capacity and other critical metrics. Monsanto can, therefore, predict which seeds will grow best in which fields and under which conditions.

Policy implications

The first sets of narratives described suggest that the industrial internet will change production as we know it and will change the world for the better. According to industry and regulators, this will happen as long as policymakers build the right legislative framework.

The second set of discourses says there will be an exponential increase in *operational efficiency*. As a consequence, we speculate that *algorithm-based* policies might replace *evidence-based* policies and challenge the balance between political systems run by people and machines.

Thirdly, the industrial internet might push the system towards an *outcome economy*. Within such an economic system, policies could become sellable commodities, or could stay public, with decision-making shifting towards a more principle-oriented approach. Democratic processes should potentially change to set the parameters of algorithms and machines.

The actors involved in these matters will have to keep these changes in mind in order to retain their influence over the way policies will be drafted, decided, implemented and evaluated in the future. They will have to cope with the tension between the risk of a technocratic and dystopian future, the promise of a dream-like utopia, or tech-enhanced business as usual. Often reality has proven to lie in between those scenarios.

In the case of the industrial internet, the discourse and narratives will shape its further development and goals. Professional communicators play a pivotal role in shaping such discourse wherever they operate: in industry, in government or within pressure groups. The most important mission that they have is to transmit such goals and discourses in an understandable way in order to keep citizens aware of the consequences of the changes that are happening so that citizens can ultimately retain a transparent and democratic overview of the future of society.

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Notes:

- *This article draws on reflections made by the author in the chapter "Policy and politics in the era of Industrial Internet" included in the volume Out-thinking Organizational Communications – The Impact of Digital Transformation?, published by Springer.*
- *The post gives the views of its authors, not the position of LSE Business Review, the London School of Economics or the University of Minnesota.*
- *Before commenting, please read our Comment Policy*

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